

ABSTRACT OF THE DISCLOSURE

A ferroelectric capacitor includes a pair of electrodes, and at least one ferroelectric held between the pair of electrodes, in which the ferroelectric includes a first ferroelectric layer having a surface roughness (RMS) determined with an atomic force microscope of 10 nm or more; and a second ferroelectric layer being arranged adjacent to the first ferroelectric layer and having an RMS of 5 nm or less. A process produces such a ferroelectric capacitor by forming a first ferroelectric layer on or above one of a pair of electrodes at a temperature equal to or higher than a crystallization temperature at which the first ferroelectric layer takes on a ferroelectric crystalline structure, and forming a second ferroelectric layer on the first ferroelectric layer at a temperature lower than a crystallization temperature at which the second ferroelectric layer takes on a ferroelectric crystalline structure.